

March 01, 2017

Tom Moe  
USS Corporation  
P.O. Box 417  
8771 Park Ridge Dr  
Mountain Iron, MN 55768

RE: Project: USS MinnTac NPDES Line 3 Wkly  
Pace Project No.: 1283240

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on February 22, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods  
melisa.woods@pacelabs.com  
(218)742-1042  
Project Manager

Enclosures

cc: Cory Hertling  
Terri Sabetti, NTS



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283240

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### Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification UST-107

Alaska Certification UST-107

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283240

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1283240001	WS-002 Scrubber Make Up	Water	02/22/17 09:00	02/22/17 16:40
1283240002	WS-003 Thickner Overflow	Water	02/22/17 08:50	02/22/17 16:40

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## SAMPLE ANALYTE COUNT

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283240

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1283240001	WS-002 Scrubber Make Up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1283240002	WS-003 Thickner Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V

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## ANALYTICAL RESULTS

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283240

Sample: <b>WS-002 Scrubber Make Up</b> Lab ID: <b>1283240001</b> Collected: 02/22/17 09:00    Received: 02/22/17 16:40    Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP, Lab Filtered</b> Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Calcium, Dissolved	<b>115</b>	mg/L	5.0	0.058	10	02/27/17 15:23	02/28/17 10:23	7440-70-2	
Magnesium, Dissolved	<b>251</b>	mg/L	5.0	0.64	10	02/27/17 15:23	02/28/17 10:23	7439-95-4	
Total Hardness, Dissolved	<b>1320</b>	mg/L	100	2.8	10	02/27/17 15:23	02/28/17 10:23		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	<b>889</b>	mg/L	20.0	10.0	10		02/28/17 13:10	14808-79-8	

Sample: <b>WS-003 Thickner Overflow</b> Lab ID: <b>1283240002</b> Collected: 02/22/17 08:50    Received: 02/22/17 16:40    Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP, Lab Filtered</b> Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Calcium, Dissolved	<b>688</b>	mg/L	5.0	0.058	10	02/27/17 15:23	02/28/17 10:26	7440-70-2	
Magnesium, Dissolved	<b>342</b>	mg/L	5.0	0.64	10	02/27/17 15:23	02/28/17 10:26	7439-95-4	
Total Hardness, Dissolved	<b>3130</b>	mg/L	100	2.8	10	02/27/17 15:23	02/28/17 10:26		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	<b>2200</b>	mg/L	40.0	20.0	20		02/28/17 14:14	14808-79-8	

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## QUALITY CONTROL DATA

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283240

QC Batch: 106939

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1283240001, 1283240002

METHOD BLANK: 423882

Matrix: Water

Associated Lab Samples: 1283240001, 1283240002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.0058	02/28/17 09:25	
Magnesium, Dissolved	mg/L	ND	0.50	0.064	02/28/17 09:25	

LABORATORY CONTROL SAMPLE: 423883

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	50.0	100	85-115	
Magnesium, Dissolved	mg/L	50	50.8	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 423884

423885

Parameter	Units	1283366001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	43.2	50	50	92.9	92.7	99	99	70-130	0	20	
Magnesium, Dissolved	mg/L	71.0	50	50	122	121	102	99	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 423886

423887

Parameter	Units	1283366003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	40.9	50	50	92.1	91.1	102	101	70-130	1	20	
Magnesium, Dissolved	mg/L	67.9	50	50	121	119	106	102	70-130	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALITY CONTROL DATA

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283240

QC Batch: 106981

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1283240001, 1283240002

METHOD BLANK: 423989

Matrix: Water

Associated Lab Samples: 1283240001, 1283240002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	02/28/17 07:27	

LABORATORY CONTROL SAMPLE: 423990

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	50.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 423991 423992

Parameter	Units	1283362001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	11.9	50	50	62.8	62.9	102	102	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 423993 423994

Parameter	Units	1283240001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	889	500	500	1380	1380	98	98	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALIFIERS

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283240

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-V Pace Analytical Services - Virginia

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: USS MinnTac NPDES Line 3 Wkly

Pace Project No.: 1283240

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1283240001	WS-002 Scrubber Make Up	EPA 200.7	106939	EPA 200.7	106963
1283240002	WS-003 Thickner Overflow	EPA 200.7	106939	EPA 200.7	106963
1283240001	WS-002 Scrubber Make Up	EPA 300.0	106981		
1283240002	WS-003 Thickner Overflow	EPA 300.0	106981		

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**CHAIN-OF-CUSTODY / An**  
The Chain-of-Custody is a LEGAL DOCUMENT

**W0# : 1283240**

PM: MMW Due Date: 03/08/17  
CLIENT: USS CORP

**Section A**

**Required Client Information:**

Company: USS Corporation  
Address: P.O. Box 417  
Mt. Iron, MN 55768  
Email:  
Phone:  
Fax:  
Requested Due Date:

**Section B**

**Required Project Information:**

Report To: Tom Moe  
Copy To:  
Purchase Order #:  
Project Name: NPDES LINE 3 WW  
Project #:

**Section C**

**Invoice Information:**

Attention:  
Company Name:  
Address:  
Pace Quote:  
Pace Project Manager: heather.zika@pacelabs.com  
Pace Profile #:

**Regulatory Agency**


**State / Location**

**Requested Analysis Filtered (Y/N)**

ITEM #	SAMPLE ID  One Character per box. (A-Z, 0-9 / . -) Sample ids must be unique	MATRIX		CODE		COLLECTED		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS		Preservatives		Analyses Test		Requested Analysis Filtered (Y/N)		Residual Chlorine (Y/N)		SAMPLE CONDITIONS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Drinking Water	DW	WT	WT	START	END			Unpreserved		H2SO4		HNO3		HCl		NaOH		Na2S2O3		Methanol		Other		LAB FILTERED: SO4		Lab FILTERED: Ca,Mg,Hard																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

**SAMPLER NAME AND SIGNATURE**  
PRINT Name of SAMPLER: Paul M. Moe  
SIGNATURE of SAMPLER: *Paul M. Moe*  
DATE Signed: 2-22-17



	Document Name: <b>Sample Condition Upon Receipt Form</b>	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: <b>F-VM-C-001-Rev.09</b>	Issuing Authority: Pace Virginia, Minnesota Quality Office

**Sample Condition  
Upon Receipt**

Client Name:

USS Corp

**WO#: 1283240**

PM: MMW

Due Date: 03/08/17

CLIENT: USS CORP

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Other: 4  
☐ Commercial ☐ Pace ☐ Other: \_\_\_\_\_

Tracking Number: \_\_\_\_\_

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No      Seals Intact? ☐ Yes ☐ No      Optional: Proj. Due Date: \_\_\_\_\_ Proj. Name: \_\_\_\_\_

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: \_\_\_\_\_      Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808      Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.5      Cooler Temp Corrected °C: 1.8      Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA  
Temp should be above freezing to 6°C      Correction Factor: 10.3      Date and Initials of Person Examining Contents: 2-22-17 MT

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

**CLIENT NOTIFICATION/RESOLUTION**

Field Data Required? ☐ Yes ☐ No

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [Signature]

Date: 2/23/17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)